

Resources for Professionals Involved in Food Residuals Collection, Processing and Composting

This DRAFT listing, compiled by DEP, is intended to provide free Web-based information and resources for professionals who manage food waste, also known as **food residuals**, at commercial facilities and on-farm operations. The contents do not necessarily reflect the views and policies of the DEP, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

- Section One identifies Massachusetts resources that address specific questions (pages 1-5)
- Section Two provides resources in broad-based categories (pages 6-8).

Please note that municipal leaf and yard waste information and home composting resources are not included here, but can be found on DEP's composting page at:

<http://www.mass.gov/dep/recycle/compost.htm>

Section One: The Basics in Massachusetts

This section includes information and resources related specifically to Massachusetts, including:

- Size of Industry
- Generation Estimates
- Collection
- State Policy and Regulation
- Siting
- Funding
- Technical Assistance
- Training
- Equipment
- Testing
- Markets

What is the Size of the Composting Industry?

As part of the Recycling Economic Information Study (2000), the Northeast Recycling Council documented the economic value of the composting industry in Massachusetts, including:

- Establishments*: 129
- Employment: 444
- Annual Payroll: \$9.3 million
- Estimated Receipts: \$46.6 million

http://www.nerc.org/documents/rei_report.html

*("Establishments" are defined as: businesses which produce compost, mulch, bark, and other soil amendment or landscaping products from source separated yard trimmings, discarded wood and food, biosolids and other organic feedstocks)

What is the Estimated Generation of Food Residuals in Massachusetts?

There are two recent DEP studies that estimate the generation of food residuals in Massachusetts:

- *Identification, Characterization, and Mapping of Food Waste and Food Waste Generators In Massachusetts (2002)* estimates a total of 5,799 food waste generators in Massachusetts producing an estimated 880,000 tons per year of food residuals (this number omits small establishments in some generator categories). Generator categories included in the study: manufacturers/processors, distributors/wholesalers, hospitals, nursing homes (and related facilities), colleges and universities, independent preparatory

schools, correctional facilities, resorts/conference facilities, supermarkets, and restaurants.

<http://www.mass.gov/dep/bwp/dswm/dswmpubs.htm#other>

- *Statewide Commercial Waste Disposal Assessment Fact Sheet and Report (2002)* estimates commercial disposal by business group and material type for Massachusetts businesses for calendar year 2000.

<http://www.mass.gov/dep/recycle/business.htm>

Who is Generating Food Waste?

Identification, Characterization, and Mapping of Food Waste and Food Waste Generators In Massachusetts (2002) provides a summary of information on major commercial and institutional generators of food waste in Massachusetts. <http://www.mass.gov/dep/recycle/compost.htm>. DEP also has established a comprehensive database of food waste generators that can be linked to our GIS system to develop customized food waste generation information and maps for a particular region of the state or particular business sector. This information can be used to help plan collection and processing systems for commercial and institutional food waste. For more information, please contact Karen Michaels at (617) 574-6820.

Who Collects and Manages Food Waste?

Food Residuals Haulers/Feeders/Renderers Listings on Waste Cap's Web site lists many options for food waste management.

- Food and Organic Residuals Haulers Listing: A list of haulers will accept food residuals for composting or animal feed. Some will also take yard waste and other compostables: http://www.wastecap.org/wastecap/commodities/organics/food_haulers.htm
- Licensed Composting Facilities in Eastern Massachusetts: A list of farms and composting facilities approved by the Department of Environmental Protection to process food and other organic residuals: http://www.wastecap.org/wastecap/commodities/organics/composting_facilities.htm
- Licensed Food Residuals Feeders Listing: A list of food residual feeders that have obtained a permit from the Massachusetts Department of Food and Agriculture to collect food residuals, cook it, and feed it to their livestock: http://www.wastecap.org/wastecap/commodities/organics/waste_feeders.htm
- Rendering Haulers Listing: A list of haulers that will pick up grease and animal processing by-products, and sell them to rendering plants to make tallow for soap-making: <http://www.wastecap.org/wastecap/commodities/organics/renderers.htm>

What is the State Plan Relative to Composting?

The Beyond 2000 Solid Waste Master Plan outlines DEP's Food Waste Recycling Initiative which focuses on the following through composting and other means such as direct animal feed, processed animal feed, and land application:

- Evaluating barriers to composting and, where necessary, make changes aimed at fostering a positive climate for composting operations;
- Exploring expanding the state's role in siting new composting operations;
- Implementing a Composting Education Campaign; and,
- Providing Grants and Technical Assistance.

The Food Waste Recycling Initiative can be found on pages 2-16 of the Master Plan.

<http://www.mass.gov/dep/bwp/dswm/dswmpubs.htm#swmp>

How Does the State Regulate Organic Residuals?

Regulatory Disposal Bans: There are no current disposal bans on food residuals. However in the Beyond 2000 Master Plan DEP proposed banning this material from landfills by 2010 beginning

with a waste ban for the commercial sector. Leaves and yard waste are currently banned from Massachusetts landfills. Waste ban guidance can be found at:

<http://www.mass.gov/dep/recycle/regs.htm>

How Does the State Regulate Compost Facilities?

DEP has two sets of regulations addressing composting of food and other organic materials:

- *310 CMR 16.00: Site Assignment Regulations for Solid Waste Facilities.* This reviews siting criteria and conditional exemptions for composting facilities.
<http://www.mass.gov/dep/bwp/dswm/files/310cmr16.htm>
- *310 CMR 19.00: Solid Waste Management.* These are regulations for design, construction, and operation of all solid waste facilities including compost facilities.
<http://www.mass.gov/dep/bwp/dswm/files/310cmr19.htm>

How Does the State Provide Registration for On-Farm Composting Operations?

Farmers are conditionally exempt from DEP regulations to compost food residuals when registered with the Department of Food and Agriculture (DFA). Agricultural composting operations must register with the DFA in accordance with *330 CMR 25.03: Agricultural Composting Program*. See the following website for additional information on DFA registration and permits: http://www.mass.gov/dfa/legal/regs/farmprod_2500%7E1_composting.pdf

Where Can I Establish a Commercial Compost Site?

The Site Finder Service of the Massachusetts Alliance for Economic Development provides free comprehensive commercial real estate site and market information to businesses considering an expansion within or relocation to Massachusetts. <http://www.massecon.com/os.sitefinder.asp>

Where Can I Get Funding?

DEP's Recycling Loan Fund (RLF) provides loans to Massachusetts recycling-related businesses that may not be able to obtain loans from conventional sources. Loan amounts for conventional materials range from \$50,000 to \$300,000. Loans for targeted materials, such as food waste and construction and demolition debris, can be "low-interest" and range from \$50,000 to \$500,000. The RLF is funded by DEP and administered by the Massachusetts Business Development Corporation (MBDC). Telephone: 617-350-8877, extension 29.

<http://www.massbusiness.com/site/content/recycling.asp>

DEP's Recycling Industries Reimbursement Credit (RIRC) Grant Program provides financial assistance to businesses to use or increase the use of difficult to recycle materials in their products. Grants of up to \$50,000 are available to end-users (recycling processors and manufacturers). Grants of up to \$150,000 are available for projects that target construction and demolition debris or organics. Future funding of this program is subject to appropriation.

Link to application: <http://www.mass.gov/dep/recycle/business.htm>

Link to regulations: <http://www.mass.gov/dep/recycle/grants>

Department of Food and Agriculture's grant programs can provide funding for compost-related projects and capital improvements. <http://www.mass.gov/dfa/programs/index.htm>

Chelsea Center for Recycling and Economic Development provides a variety of grants including, research, product testing, business development, internships and trade shows. For example, the Recycling-Based Community Economic Development Grant Program provides grants of up to \$25,000 to municipalities and non-profit organizations to develop recycling-based enterprises.

<http://www.chelseacenter.org/ProgramsServices1.htm>

Environmental Quality Incentives Program of the Natural Resources Conservation Service of the U.S. Department of Agriculture provides farmers with grants of up to \$450,000 incentive payments and cost-shares to implement conservation practices, such as composting.

<http://www.nrcs.usda.gov/programs/eqip/>

For information on applying, contact your local NRCS office at:

<http://www.ma.nrcs.usda.gov/map.htm>

Other sources of funding can be found by searching the following directories:

- *Chelsea Center's Directory of Services for the Recycling Industry*
<http://www.chelseacenter.org/ResourcesLinks2.asp>
- U.S. EPA's *Jobs Through Recycling Web site* <http://www.epa.gov/jtr/finance/index.htm>
- *Catalog of Federal Domestic Assistance* allows users to search for grant sources within federal government agencies and departments through a single search, without being required to know the name of the department administering the grant. Eligible entities can include: State and local governments; federally-recognized Indian tribal governments; Territories (and possessions) of the United States; domestic public, quasi-public, and private profit and nonprofit organizations and institutions; specialized groups; and individuals. <http://www.cfda.gov/>

Grant Writing Tutorial provides an on-line interactive software tool that walks the user through the grant-writing process and helps them learn to write more competitive grants.

<http://www.epa.gov/grtlakes/seahome/grants.html>

Who Provides Technical Assistance for Organics Recycling Businesses?

Directory of Services for the Recycling Industry, compiled by the Chelsea Center for Recycling and Economic Development, informs recycling businesses of the many public and private financial and technical resources available in Massachusetts to new and expanding businesses working on all aspects of recycling, including: Grants, Loans and Venture Capital; Technical Assistance/Research; Product Procurement; Site Finding; Materials Sourcing; Business Plan Review; Education and Training; Export Assistance; and, Minority Business Assistance.

<http://www.chelseacenter.org/ResourcesLinks1.asp>

The Chelsea Center for Recycling and Economic Development offers a range of technical and business assistance programs for manufacturers that use or are interested in using recovered materials in their products. The Chelsea Center also assists municipalities and non-profit organizations interested in developing or expanding recycling enterprises in their communities.

<http://www.chelseacenter.org>

The Re-Made in Massachusetts Alliance is a dynamic and growing network of recycled product manufacturers located in Massachusetts. <http://www.chelseacenter.org/pdfs/remdinfo.pdf>

Northeast Recycling Council is a coalition of the ten Northeastern states united for recycling market development. NERC provides a number of services and resources, including a Web site that provides: state agency organics contact names; summaries of the Northeast states compost regulations; and summaries of states fertilizer regulations as they relate to compost.

<http://www.nerc.org/index.html>

Who Provides Technical Assistance for On-Farm Composting Operations?

Massachusetts Department of Food and Agriculture provides grants and business planning programs and registers on-farm composting operations
<http://www.mass.gov/dfa/programs/index.htm>

The Center for Ecological Technology (CET) is a western Massachusetts regional non-profit organization who assists with solid waste issues, environmental education, sustainable development and energy conservation and has worked with on-farm composting operations for many years and documented its successes for others to follow as models.
<http://www.cetonline.org/FarmBusiness/farm%20composting.htm>.

Where Can I Find Training for Compost Facility Operations?

Maine Composting School provides training to people interested and/or involved with medium and large-scale composting operations.
<http://www.composting.org/>

Other training providers are listed on the Compost Council Web site at:
<http://www.compostingcouncil.org/section.cfm?id=8>

Where Can I Find Composting Equipment?

Recycling and Solid Waste Equipment Link to North Carolina's Recycling Business Assistance Center's site: <http://www.p2pays.org/rbac/main/equip.htm>

Waste Equipment Technology Association <http://www.wastec.org/>

Who Provides Compost-Testing Services?

Material testing is needed to verify product safety and market claims.

- *The Directory of Testing Laboratories for the Recycling Industry* is intended to serve as an information resource for manufacturers, individuals and organizations working in the recycling industry. The Directory can be used as a reference tool to find and contact experts in materials and products testing, and is organized so that the user can easily locate a laboratory according to type of testing needed or material being used.
<http://www.chelseacenter.org/pdfs/labdir01.pdf>
- *University of Massachusetts Soil and Plant Tissue Testing Laboratory* provides low-cost testing of compost and recommendations that lead to the wise and economical use of soils and soil amendments. <http://www.umass.edu/plsoils/soiltest/compbrochmay2002.pdf>
- *Test Methods for the Evaluation of Composting and Compost* provides detailed protocols for the composting industry to verify the physical, chemical, and biological condition of composting feedstocks, material in process and compost products at the point of sale.
<http://www.compostingcouncil.org/article.cfm?id=24>

How Can I Sell Compost to Federal, State and Municipal Government?

There are certain regulations and requirements that surround the procurement of both commodities and services for federal, state and local governments.

- *The Environmentally Preferable Purchasing (EPP) Program* is a federal government-wide program that encourages and assists Executive agencies in the purchasing of environmentally preferable products and services.
 - For information on the EPP program visit:
<http://www.epa.gov/oppt/epp/index.htm>

- For information on selling environmental products to the federal government visit:
<http://www.epa.gov/opptintr/epp/documents/sell/selling.htm>
- *How to do Business with the Commonwealth of Massachusetts*: A guide for manufacturers and suppliers of Environmentally Preferable Products (EPPs) that explains what Statewide Contracts are; how the state buys products and services (also known as “the state procurement process”); provides step-by-step advice on becoming a contractor; and, gives tips on selling to state agencies and municipalities once you are a contractor.
http://www.mass.gov/osd/enviro/how_to_do_business.pdf
- *Massachusetts Statewide Contract*: Statewide Contracts are written agreements between the Commonwealth of Massachusetts and selected contractors to provide a wide variety of products and services to state and local entities. It is then up to those individual departments and agencies to purchase goods and services directly from the awarded vendor(s).
 - Massachusetts Operational Services Division Statewide Contract for Farm, Lawn, Garden and Outdoor Application Products (Includes: Pesticides, Live and Ornamental Nursery Products, Compost and Mulch)
<http://www.mass.gov/osd/enviro/products/compostandmulch.htm>
 - MassHighway use of Compost in Construction Projects
<http://www.mass.gov/mhd/recycle/recyconst.htm>
- *Compost Use on State Highway Applications* is a study that was funded by EPA, the Composting Council Research and Education Foundation (CCREF) to promote compost use on state and local ‘roadside’ applications.
<http://www.epa.gov/epaoswer/non-hw/compost/highway/index.htm>

Section Two: More Comprehensive Information and Broad-Based Resources

These Web sites include a wide variety of resources for facility operators, including wide-ranging and comprehensive publications:

- Learning the Basics
- Federal and State Agency Compilation of Resources
- Resources for On-Farm Composting
- Privately Maintained Resources
- Periodicals
- Listservs

Where Can I Learn the Basics of the Organics Business?

Introduction to Commercial and On-Farm Composting: The Vermont State Agency of Natural Resources Composting Web site will help those interested in exploring the possibility of entering the professional organics field with some introductory information about the business. This website addresses topics such as: Why compost? Can composting make me money? Making Compost. Using Compost. <http://www.anr.state.vt.us/dec/wastediv/compost/main2.html>

U.S. Environmental Protection Agency's Jobs Through Recycling Program: This website provides those entrepreneurs interested in starting a recycling business with free resources that can help them explore and understand the basics of general business planning, recycling business planning, and creating recycling markets. Tools include links to organizations that can provide technical assistance, and to on-line publications such as tutorials, guidelines, and model plans. <http://www.epa.gov/jtr/bizasst/bizplan.htm>

Biocycle Journal of Composting and Organics Recycling: published since 1960, covers all aspects of the organics field and includes several comprehensive links pages on its Web site: <http://www.jgpress.com/>

What are Some Comprehensive Web Sites and Resources Maintained by Federal and State Agencies?

U.S. Environmental Protection Agency's Composting Web site includes many publications and resources for composting professionals, municipal solid waste managers, waste generators and end-users that include: technical reports, specifications, handbooks, facts sheets, etc. <http://www.epa.gov/epaoswer/non-hw/compost/index.htm>

U.S. EPA's Jobs Through Recycling (JTR) Program Web site provides recycling market development information for state and local officials, sources of technical and financial assistance for recycling businesses, and general information for visitors interested in learning more about JTR. <http://www.epa.gov/jtr/>

U.S. EPA's Tools for Calculating Environmental Benefits of Composting:

- *Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sink:* This document presents the results of an in-depth analysis to determine the net green house gas impacts of composting yard trimmings and food discards. [http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BNT44/\\$File/chapter5.pdf](http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BNT44/$File/chapter5.pdf)
- *Waste Reduction Model (WARM):* EPA created WARM to help solid waste planners and organizations track and voluntarily report greenhouse gas emissions reductions from several different waste management practices including composting. <http://yosemite.epa.gov/oar/globalwarming.nsf/content/ActionsWasteWARM.html>

Vermont State Agency of Natural Resources Composting Web site includes many resource lists, including multiple links for commercial and on-farm composting professionals and operations.
<http://www.anr.state.vt.us/dec/wastediv/compost/main2.html>

California Integrated Waste Management Board includes a wide variety of resources and web pages devoted specifically to food residual composting.
<http://www.ciwmb.ca.gov/Organics/Default.htm>

CWC: Formerly the Clean Washington Center, the CWC focuses on increasing markets and uses of recyclable commodities by manufacturers and end users and they promote economic development and increased diversion of recyclables. Over ninety publications are available on this website that may help recyclers, reclaimers, manufacturers and service providers develop new recycled content products and markets. <http://www.cwc.org/organics.htm>

What are Some Privately Maintained Web Sites that Provide Information and Resources?

U.S. Composting Council: A national organization involved in research, public education, composting and compost standards, expansion of compost markets, and the enlistment of public support. <http://www.compostingcouncil.org/>

Compost Council of Canada is a national non-profit, member-driven organization with a charter to advocate and advance composting and compost usage. It serves as the central resource and network for the composting industry in Canada and, through its members, contributes to the environmental sustainability of the communities in which they operate.
<http://www.compost.org/>

Organic Materials Management Strategies by US EPA describes seven composting strategies for organic materials in the U.S. municipal solid waste (MSW) stream and presents an analysis of the benefits and costs of each strategy, the potential for diverting organic materials from landfills or waste-to-energy facilities, and the potential markets for diverted organic materials.
<http://www.epa.gov/compost/omms.pdf>

Cornell Composting Homepage Web site provides access to a variety of composting educational materials and programs developed at Cornell University.
http://www.cfe.cornell.edu/compost/Composting_Homepage.html

A number of Associations provide services, issue publications and maintain Web sites, which include resources that are helpful for solid waste and recycling professionals, including:

National Renderers Association <http://www.renderers.org/>

National Solid Waste Management Association <http://www.nswma.org/>

New England Biosolids and Residuals Association <http://www.nebiosolids.org/intro.html>

Solid Waste Association of North America <http://www.swana.org/default.asp>

Where Can I Learn More About On-Farm Composting?

Farm-Scale Composting Resource List, compiled by Appropriate Technology Transfer for Rural Areas (ATTRA), includes a wide-ranging list of web-based materials:
<http://attra.ncat.org/attra-pub/farmcompost.html>

Center for Ecological Technology: see listing in Section One, under “Who provides resources for On-Farm Composting Operations.”

A Farmer's Guide for Evaluating the Collecting and On-Farm Composting of Grocery Store Organic Waste. Available by Request: Robert Butler or Gerald Nolte. College of Agriculture, Food and Environmental Sciences. UW-River Falls. 410 S. 3rd St. River Falls, WI 54022. 715-425-3985.

What are the Professional Periodicals in the Composting Field?

Biocycle Journal of Composting and Organics Recycling: published since 1960, covers all aspects of the organics field and includes several comprehensive links pages on its Web site: <http://www.jgpress.com/>

Links to *BioCycle* (including *Compost Science and Utilization*), *Resource Recycling*, *Composting News*, *Recyclers World*, *WasteAge*.

<http://www.ciwmb.ca.gov/Organics/MarketGuide/Resource.htm>

What are the Listservs in the Composting Field for Professionals?

Listservs are designed to provide users with a place to pose questions via e-mail, offer responses, and post messages.

- *The Composter's Forum*, includes many sectors: Home Composting, Vermicomposting, Large Scale Composting, and Composting Toilets Forums.
<http://www.oldgrowth.org/compost/forum/index.html>
- *The Compost Council Listserv* is for professionals in the organics management industry to ask questions of USCC members and fellow professionals. Non-members of USCC are welcome as guests and are free to post messages to the discussion.
<http://mailman.cloudnet.com/mailman/listinfo/compost>
- *WASTENOT* E-mail: wastenot@maelstrom.stjohns.edu, is an un-moderated electronic forum for the professional exchange of information and communication among those interested in processing, composting, and utilization of organic and compostable materials.
- *The Environmentally Preferable Products Procurement Listserv (EPPNet)* was established by the Northeast Recycling Council to link federal, state, local and private procurement and environmental officials charged with purchasing environmentally preferable products and developing policies for the procurement of these products. <http://www.nerc.org/eppnet.html>